

VSC7429

26-Port Layer 2 Gigabit Ethernet Switch with 12 Fully Integrated Copper PHYs and Embedded 32-bit CPU

Microsemi's next-generation switch family delivers a comprehensive, end-to-end Carrier Ethernet solution.

VSC7429 is the industry's first fully integrated 26-port Ethernet switch with 12 Gigabit Ethernet copper PHYs in a single package. In conjunction with the VSC8512 12-port PHY, 24/26-port switches can be designed using only two ICs. VSC7429 is intended for Telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and Synchronous Ethernet.

12 GbE Cu PHYs, 12 SGMII interfaces, two of which support 1G/2.5G, and up to three QSGMII ports. One of the SGMII ports can be dedicated to the CPU for packet insertion and extraction.

VSC7429 meets the IEEE 802.3az requirements for green energy efficient Ethernet through Microsemi's ActiPHY™ and PerfectReach™ energy efficient modes.

A powerful embedded 416 MHz MIPS processor 32-bit CPU with DDR2 external memory and DMA-based frame extraction and insertion supports timing over packet, Ethernet OAM, and performance monitoring.

VSC7429 is an excellent choice for Mobile backhaul and Microwave backhaul applications, and for provider service demarcation points in Edge and Access devices.

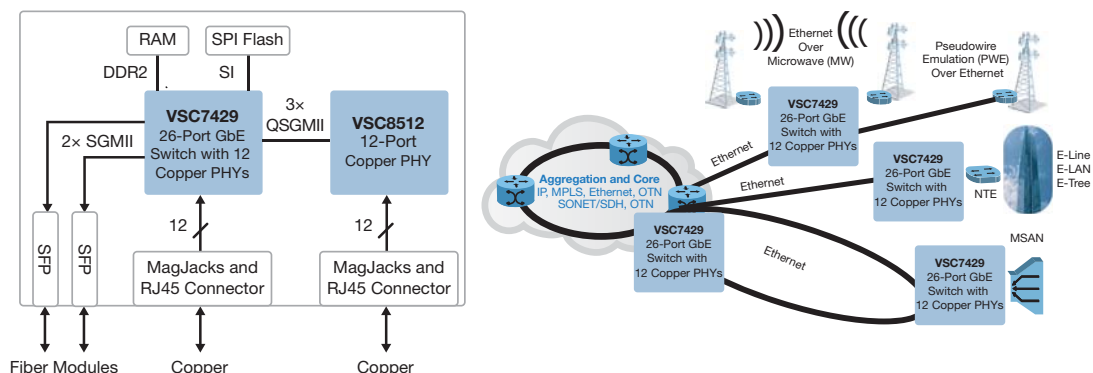
A comprehensive application programming interface (API) and software package are provided for Carrier Ethernet applications. The software package integrates easily with third-party software, preserving existing software investments while adding new, enhanced carrier functionality.

Highlights

- Integrated Cu PHYs
- IEEE 1588 and Synchronous Ethernet network timing
- Supports IEEE 802.3az and green energy efficiency modes with ActiPHY™ and PerfectReach™

Applications

- Carrier Ethernet switches
- Mobile backhaul
- Ethernet Access Devices (EAD): CPE, NTE, and MTU



Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

VSC7429

26-Port Layer 2 Gigabit Ethernet Switch with 12 Fully Integrated Copper PHYs and Embedded 32-bit CPU

I/O Configurations

- 12x 1G Cu PHY, 3x QSGMII, 1x SGMII, 1x 1G/2.5G SGMII
- 12x 1G Cu PHY, 10x SGMII, 2x 1G/2.5G SGMII
- 10x 1G Cu PHY, 8x SGMII, 2x 1G/2.5G SGMII

Architecture

- Shared memory buffer with per-port and CoS memory management
- 4 Mb packet memory
- Hierarchical MEF compliant policing and scheduling
- 8 priorities and 8 CoS queues per port with strict or deficit-weighted round robin scheduling
- Shaping/policing per queue and per port
- Advanced security and prioritization available through a multi-stage TCAM engine
- 12x integrated 10/100/1000BASE-T Ethernet copper transceivers (IEEE 802.3ab compliant) with ActiPHY and Perfect-Reach power management and VeriPHY™ cable diagnostics
- Integrated 416 MHz MIPS CPU with DDR2 and serial flash interface

Layer 2 Switching

- 802.1Q VLAN switch with 8K MACs and 4K VLANs
- Push/pop up to two VLAN tags
- IPv4/IPv6 multicast
- Policing with storm control and MC/BC protection
- RSTP and MSTP support
- Hardware and software-based learning

- Link aggregation (IEEE 802.3ad)
- Independent and shared VLAN learning (IVL, SVL)
- Jumbo frame support

Carrier Ethernet Features

- Provider Bridging (PB)
- MEF E-Lane, E-Line, and E-Tree services
- Dual leaky bucket policers with remarking and statistics
- OAM and protection switching
- L1 Synchronous Ethernet
- L2 IEEE 1588
- Enhanced Carrier Ethernet API

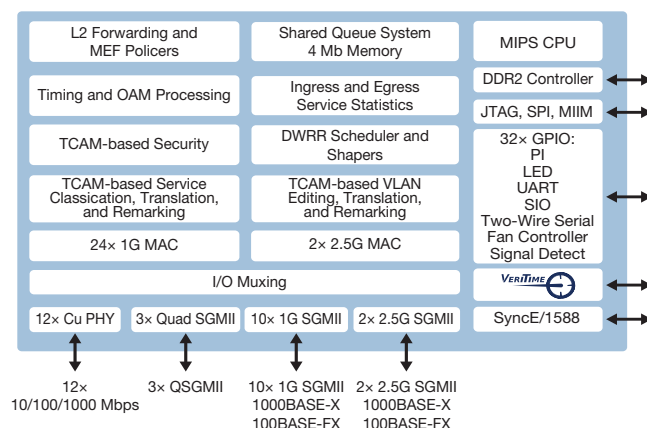
Key Specifications

- 27 mm × 27 mm thermally enhanced BGA package
- Operating temperature -40 °C to 125 °C

Related Products

Visit www.microsemi.com for information about these related products:

- VSC7460/VSC7462 24/12-Port Gigabit Ethernet Carrier Ethernet Switch
- VSC7364/VSC7366 24/12-Port 1GbE + 2/1× 10G Carrier Ethernet MAC
- VSC8512 12-Port 10/100/1000BASE-T PHY with SGMII and QSGMII MAC Interface



Microsemi

Microsemi Corporate Headquarters
 One Enterprise, Aliso Viejo, CA 92656 USA

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense and security, aerospace, and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs, and ASICs; power management products; timing and synchronization devices and precise time solutions; voice processing devices; RF solutions; discrete components; enterprise storage and communications solutions, security technologies, and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California, and has approximately 4,800 employees worldwide. Learn more at www.microsemi.com.